



UNITED STATES MARINE CORPS  
MARINE CORPS AIR STATION  
BOX 99100  
YUMA, ARIZONA 85369-9100

StaO 4790.15  
3DF3  
14 DEC 1990

STATION ORDER 4790.15

From: Commanding Officer  
To: Distribution List

Subj: ENLISTED ENGINE WASH OPERATORS QUALIFICATION/DESIGNATION

Ref: (a) OPNAVINST 4790.2G  
(b) NA01-11OHCE-1/1B  
(c) NA01-11OHCE-2/6-3

Encl: (1) Enlisted Engine Wash Operators Designation Form  
(2) Enlisted Engine Wash Operator Cockpit Checklist  
(3) Enlisted Engine Wash Operator Spot Check

1. Purpose. To establish qualification/designation criteria for enlisted personnel to motor aircraft engines for wash purposes only.

2. Background. The Search and Rescue (SAR) Division Maintenance Department is tasked to perform power section recovery wash every 25 flight hours as per reference (c). It is essential that this task be performed in a timely and expeditious manner. By permitting enlisted personnel to motor aircraft engines, SAR's mission readiness is improved.

3. Action. Engine Wash Operator, candidates must:

- a. Be recommended by their work center NCOIC.
- b. Be senior experienced maintenance person.
- c. Be a Quality Assurance Representative/Colateral Duty Quality Assurance Representative/Colateral Duty Inspector or a Plane Captain in model.
- d. Be approved by the Search and Rescue OIC/Aircraft Maintenance Officer.

4. Responsibilities

- a. Maintenance Control/Work Center Supervisor shall:
  - (1) Submit names of qualified candidates to the AMO/SAR OIC using enclosure (1).

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(2) Maintain Engine Wash Operators Cockpit Checklist and issued to Engine Wash Operator during 25 hour inspection.

b. Quality Assurance NCOIC shall

(1) Receive candidate recommendation from AMO/SAR OIC.

(2) Administer Engine Wash Operators Test, grade and evaluate.

(3) Coordinate with AMO/SAR OIC to administer operational examination given by a Functional Check Pilot in accordance with enclosure (2).

(4) Upon successful completion of test and operational exam, type and route Engine Wash Operators Designation Form.

(5) Maintain master Engine Wash Operators Cockpit Checklist.

(6) Maintain a jacket on all Engine Wash Operators to include a copy of designation, test, and exam results and spot checks results.

(7) At a minimum, once a quarter, audit engine wash operators using enclosure (3).

(8) Yearly, evaluate engine wash operators and recommend to AMO/OIC to cancel or remain.

c. Aircraft Maintenance Officer/Officer in Charge Responsibilities:

(1) Approve or disapprove engine wash operator candidates.

(2) Ensure QA administers tests.

(3) Ensure Functional Check Pilot administers operational exam.

(4) Designate in writing engine wash operator per enclosure (1).

(5) Ensure yearly evaluation of engine wash operators.

d. Individual Engine Wash Operator Responsibilities:

(1) Check out Engine Wash Operator's Cockpit Checklist from Quality Assurance.

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(2) Ensure maintenance personnel have all gear/equipment necessary to perform engine wash.

(3) Adhere strictly to Engine Wash Operator's Cockpit Checklist enclosure (2).

(4) Return Engine Wash Operator's Cockpit Checklist to QA when aircraft engine wash is complete.

  
C. J. TURNER

DISTRIBUTION: SPL  
SAR (10)



14 DEC 1988

ENLISTED ENGINE WASH OPERATOR DESIGNATION FORM

From: Work Center NCOIC  
To: Quality Assurance NCOIC

Subj: \_\_\_\_\_ HAS BEEN NOMINATED AS A QUALIFIED  
CANDIDATE TO MOTOR ENGINE ON THE HH-1N FOR ENGINE WASHES ONLY.

\_\_\_\_\_/\_\_\_\_\_  
Work Center OIC/NCOIC/Date

From: Quality Assurance OIC/NCOIC  
To: Aircraft Maintenance Officer/SAR OIC

Subj: \_\_\_\_\_ has passed/failed the written  
examination for wash operator on the HH-1N and is/is not further  
recommended to be administered the operational examination to be given  
by a unit pilot.

\_\_\_\_\_/\_\_\_\_\_  
QA OIC/NCOIC/Date

From: Unit Pilot  
To: Aircraft Maintenance Officer/SAR OIC

Subj: \_\_\_\_\_ has been administered the examination  
on motoring engines on the HH-1N for engine washes only. I feel he  
is/ is not qualified to be designated as a Engine Was Operator.

\_\_\_\_\_/\_\_\_\_\_  
SAR Pilot/Date

ENCLOSURE (1)

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From: Aircraft Maintenance Officer/SAR OIC

To: All Concerned

Subj: AUTHORIZATION TO MOTOR ENGINES ON THE HH-1N FOR ENGINE WASHES ONLY.

Ref: (a) OPNAVINST 4790.2G

(b) Current SAR Program

1. In accordance with references (a) and (b) \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
is hereby designated as an engine wash  
Name Rank SSN  
operator on the HH-1N for SAR Division.

\_\_\_\_\_  
Engine Wash Operator/Date

\_\_\_\_\_  
AMO/SAR OIC / Date

ENCLOSURE (1)

14 DEC 1988

ENLISTED ENGINE WASH OPERATOR COCKPIT CHECKLIST

**\*\*\*CAUTION\*\*\***

**Allow engine to cool down at least 40 minutes since last operation.**

A. Perform a visual walkaround inspection:

1. Intake cushions and exhaust covers are removed.
2. Check for removal of the filter from PPC-56 and disconnect of the "T" fitting on PPC-53.
3. check to ensure main rotor is tied down and rotor brake applied.
4. Check to ensure battery is connected.
5. check to ensure intake cowlings are in place and FOD is not on the cabin roof.
6. Tools - ATAF.
7. All personnel/equipment - properly positioned.

**\*\*\*CAUTION\*\*\***

**No maintenance will be performed during the engine wash.**

B. Perform cockpit checklist:

1. All circuit breaker - IN.
2. Master caution panel circuit breaker - PULLED.
3. All exterior lights - PULLED.
4. All Com/Nav equipment - OFF.
5. Clock - WOUND AND SET.
6. Radar altimeter - OFF.
7. Fire pull handles - IN.
8. Fire extinguishers - OFF.
9. Engine fuel control switches #1 & #2 - OFF.

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10. Crossfeed - OFF.
11. Search light and landing light - OFF.
12. Inverters - OFF.
13. Engine governor #1 & #2 - AUTO.
14. Fuel boots pumps left & right circuit breakers - PULL.
15. Engine throttles #1 & #2 - CHECK FULL CLOSED.
16. Non-essential bus - MANUAL.
17. Battery - ON/CHECK 22 VOLTS MINIMUM (MAX 29 VOLTS).
18. Master caution panel circuit breaker - PULLED.

**\*\*\*NOTE\*\*\***

**If master caution lights circuit breaker is not pulled prior to the application of APU power, the caution panel will be damaged.**

When the cockpit checklist is complete signal the captain for APU power.

19. APU power - APPLIED, ADJUST TO 26 - 28 VOLTS DC.
20. Master caution panel circuit breaker - IN.
21. Fire guard - POSTED.

**\*\*\*CAUTION\*\*\***

**Ensure fuel control switches are "OFF" and throttles are "CLOSED".**

C. Perform engine wash:

1. Signal for start (with APU).
2. Starter affected engine - ON (minimum of 25 seconds max of 30 seconds).  
NG affected engine - no higher than 25% max.  
If NG is higher than 25% - disengage starter.
3. Starter affected engine - OFF.

ENCLOSURE (2)



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4. Starter second engine - ON (minimum of 25 seconds max of 30 seconds).

NG affected engine - no higher than 25% max.

If NG is higher than 25% - disengage starter.

5. Starter second engine - OFF.

6. Allow soap solution to soak (minimum 10 minutes and max of 20 minutes).

D. Perform engine rinse: (ensure fuel remains OFF, Battery ON).

1. Starter affected engine - ON (minimum of 25 seconds max of 30 seconds).

NG affected engine - no higher than 25% max.

If NG is higher than 25% - disengage starter.

2. Starter affected engine - OFF.

3. Starter second engine - ON (minimum of 25 seconds max of 30 seconds).

NG affected engine - no higher than 25% max.

If NG is higher than 25% - disengage starter.

4. Starter second engine - OFF.

5. Repeat steps 1 - 4 as necessary if solution draining from engine is not clear.

**\*\*\*NOTE\*\*\***

**Starter limitations are:**

**30 seconds ON, 1 minutes OFF**

**30 seconds ON, 5 minutes OFF**

**30 seconds ON, 15 minutes OFF**

**repeat the duty cycle.**

E. Dry motor engines: (ensure fuel remains OFF, battery ON).

1. Signal for start (with APU).

2. Motor first engine for 25 seconds.

NG affected engine - No higher than 25% MAX

If higher than 25% - disengage starter

3. Motor second engine - No higher than 25% MAX

If NG higher 25% - disengage starter

ENCLOSURE (2)

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4. Any question or problems encountered will be directed to QA.

**\*\*\*NOTE\*\*\***

**CDI shall witness card 53 and 57 in the MRC Deck.**

ENCLOSURE (2)

14 DEC 1998

## ENLISTED ENGINE WASH OPERATOR SPOT CHECK

From: Quality Assurance  
To: SAR NCOIC

Subj: ENGINE WASH OPERATORS SPOT CHECKLIST

Ref: (a) OPNAVINST 4790.2G  
(b) Local SAR Program

1. An engine wash operator spot check was performed on \_\_\_\_\_ by \_\_\_\_\_ on date \_\_\_\_\_.

2. The following areas were checked:

a. Is the operator designated in writing by the AMO/SAR OIC? YES NO

b. Did the operator use the checklist to perform engine wash? YES NO

c. Did the operator follow the checklist? YES NO

d. Was there proper communication between operator and maintenance? YES NO

e. Were all personnel following safety procedures? YES NO

f. Were any problems encountered? YES NO

g. Does the operator need additional training? YES NO

3. Quarterly check \_\_\_\_\_.

Annual check \_\_\_\_\_.

4. Remarks:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.

ENCLOSURE (3)



(2) Maintain Engine Wash Operators Cockpit Checklist and issued to Engine Wash Operator during 25 hour inspection.

b. Quality Assurance NCOIC shall

(1) Receive candidate recommendation from AMO/SAR OIC.

(2) Administer Engine Wash Operators Test, grade and evaluate.

(3) Coordinate with AMO/SAR OIC to administer operational examination given by a Functional Check Pilot in accordance with enclosure (2).

(4) Upon successful completion of test and operational exam, type and route Engine Wash Operators Designation Form.

(5) Maintain master Engine Wash Operators Cockpit Checklist.

(6) Maintain a jacket on all Engine Wash Operators to include a copy of designation, test, and exam results and spot checks results.

(7) At a minimum, once a quarter, audit engine wash operators using enclosure (3).

(8) Yearly, evaluate engine wash operators and recommend to AMO/OIC to cancel or remain.

c. Aircraft Maintenance Officer/Officer in Charge Responsibilities:

(1) Approve or disapprove engine wash operator candidates.

(2) Ensure QA administers tests.

(3) Ensure Functional Check Pilot administers operational exam.

(4) Designate in writing engine wash operator per enclosure (1).

(5) Ensure yearly evaluation of engine wash operators.

d. Individual Engine Wash Operator Responsibilities:

(1) Check out Engine Wash Operator's Cockpit Checklist from Quality Assurance.

STATION ORDER 4790.15

From: Commanding Officer  
To: Distribution List

Subj: ENLISTED ENGINE WASH OPERATORS QUALIFICATION/DESIGNATION

Ref: (a) OPNAVINST 4790.2G  
(b) NA01-11OHCE-1/1B  
(c) NA01-11OHCE-2/6-3

Encl: (1) Enlisted Engine Wash Operators Designation Form  
(2) Enlisted Engine Wash Operator Cockpit Checklist  
(3) Enlisted Engine Wash Operator Spot Check

1. Purpose. To establish qualification/designation criteria for enlisted personnel to motor aircraft engines for wash purposes only.

2. Background. The Search and Rescue (SAR) Division Maintenance Department is tasked to perform power section recovery wash every 25 flight hours as per reference (c). It is essential that this task be performed in a timely and expeditious manner. By permitting enlisted personnel to motor aircraft engines, SAR's mission readiness is improved.

3. Action. Engine Wash Operator, candidates must:

- a. Be recommended by their work center NCOIC.
- b. Be senior experienced maintenance person.
- c. Be a QAR/CDQAR/CDI or a Plane Captain in model.
- d. Be approved by the Search and Rescue OIC/Aircraft Maintenance Officer.

4. Responsibilities

a. Maintenance Control/Work Center Supervisor shall:

(1) Submit names of qualified candidates to the AMO/SAR OIC using enclosure (1).

*Call guy  
and ask him  
about these changes.*

STATION ORDER 4790.15

From: Commanding Officer  
To: Distribution List

Subj: ENLISTED ENGINE WASH OPERATORS QUALIFICATION/DESIGNATION

Ref: (a) OPNAVINST 4790.2G  
(b) NA01-11OHCE-1/1B  
(c) NA01-11OHCE-2/6-3

Encl: (1) Enlisted Engine Wash Operators Designation Form  
(2) Enlisted Engine Wash Operator Cockpit Checklist  
(3) Enlisted Engine Wash Operator Spot Check

1. Purpose. To establish qualification/designation criteria for enlisted personnel to motor aircraft engines for wash purposes only.

2. Background. The Search and Rescue (SAR) Division Maintenance Department is tasked to perform power section recovery wash every 25 flight hours as per reference (c). It is essential that this task be performed in a timely and expeditious manner. By permitting enlisted personnel to motor aircraft engines, SAR's mission readiness is improved.

3. Action. Engine Wash Operator, candidates must:

- a. Be recommended by their work center NCOIC.
- b. Be senior experienced maintenance person.
- c. Be a QAR/CDQAR/CDI or a Plane Captain in model.
- d. Be approved by the (SAR) OIC/AMO Aircraft Maintenance Officer

4. Responsibilities

*Search and Rescue*

a. Maintenance Control/Work Center Supervisor shall:

(1) Submit names of qualified candidates to the AMO/SAR OIC using enclosure (1).

(2) Maintain Engine Wash Operators Cockpit Checklist and issued to Engine Wash Operator during 25 hour inspection.

b. Quality Assurance NCOIC shall

- (1) Receive candidate recommendation from AMO/SAR OIC.
- (2) Administer Engine Wash Operators Test, grade and evaluate.
- (3) Coordinate with AMO/SAR OIC to administer operational examination given by a Functional Check Pilot in accordance with enclosure (2).
- (4) Upon successful completion of test and operational exam, type and route Engine Wash Operators Designation Form.
- (5) Maintain master Engine Wash Operators Cockpit Checklist.
- (6) Maintain a jacket on all Engine Wash Operators to include a copy of designation, test, and exam results and spot checks results.
- (7) At a minimum, once a quarter, audit engine wash operators using enclosure (3).
- (8) Yearly, evaluate engine wash operators and recommend to AMO/OIC to cancel or remain.

c. Aircraft Maintenance Officer/Officer in Charge Responsibilities:

- (1) Approve or disapprove engine wash operator candidates.
- (2) Ensure QA administers tests.
- (3) Ensure Functional Check Pilot administers operational exam.
- (4) Designate in writing engine wash operator using enclosure (1).
- (5) Ensure yearly evaluation of engine wash operators.

d. Individual Engine Wash Operator Responsibilities:

- (1) Check out Engine Wash Operator's Cockpit Checklist from Quality Assurance.
- (2) Ensure maintenance personnel have all gear/equipment necessary to perform engine wash.



(3) Adhere strictly to Engine Wash Operator's Cockpit Checklist enclosure (2).

(4) Return Engine Wash Operator's Cockpit Checklist to QA when aircraft engine wash is complete.

C. J. TURNER

DISTRIBUTION: SPL  
SAR (10)

SAR ENGINE WASH OPERATOR DESIGNATION LETTER

From: Work Center NCOIC  
To: Quality Assurance NCOIC

Subj: \_\_\_\_\_ HAS BEEN NOMINATED AS A QUALIFIED  
CANDIDATE TO MOTOR ENGINE ON THE HH-1N FOR ENGINE WASHES ONLY.

\_\_\_\_\_/\_\_\_\_\_  
Work Center OIC/NCOIC/Date

From: Quality Assurance OIC/NCOIC  
To: Aircraft Maintenance Officer/SAR OIC

Subj: \_\_\_\_\_ has passed/failed the written  
examination for wash operator on the HH-1N and is/is not further  
recommended to be administered the operational examination to be given  
by a unit pilot.

\_\_\_\_\_/\_\_\_\_\_  
QA OIC/NCOIC/Date

From: Unit Pilot  
To: Aircraft Maintenance Officer/SAR OIC

Subj: \_\_\_\_\_ has been administered the examination  
on motoring engines on the HH-1N for engine washes only. I feel he  
is/ is not qualified to be designated as a Engine Was Operator.

\_\_\_\_\_/\_\_\_\_\_  
SAR Pilot/Date

From: Aircraft Maintenance Officer/SAR OIC  
To: All Concerned

Subj: AUTHORIZATION TO MOTOR ENGINES ON THE HH-1N FOR ENGINE WASHES ONLY.

Ref: (a) OPNAVINST 4790.2G  
(b) Current SAR Program

1. IAW references (a) and (b) \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_ is  
hereby designated as an engine wash  
Name Rank SSN  
operator on the HH-1N for SAR Division.

\_\_\_\_\_  
Engine Wash Operator/Date

\_\_\_\_\_  
AMO/SAR OIC / Date  
enclosure

ENGINE WASH OPERATORS CHECKLIST

**\*\*\*CAUTION\*\*\***

**Allow engine to cool down at least 40 minutes since last operation.**

A. Perform a visual walkaround inspection:

1. Intake cushions and exhaust covers are removed.
2. Check for removal of the filter from PPC-56 and disconnect of the "T" fitting on PPC-53.
3. check to ensure main rotor is tied down and rotor brake applied.
4. Check to ensure battery is connected.
5. check to ensure intake cowlings are in place and FOD is not on the cabin roof.
6. Tools - ATAF.
7. All personnel/equipment - properly positioned.

**\*\*\*CAUTION\*\*\***

**No maintenance will be performed during the engine wash.**

B. Perform cockpit checklist:

1. All circuit breaker - IN.
2. Master caution panel circuit breaker - PULLED.
3. All exterior lights - PULLED.
4. All Com/Nav equipment - OFF.
5. Clock - WOUND AND SET.
6. Radar altimeter - OFF.
7. Fire pull handles - IN.
8. Fire extinguishers - OFF.
9. Engine fuel control switches #1 & #2 - OFF.

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10. Crossfeed - OFF.
11. Search light and landing light - OFF.
12. Inverters - OFF.
13. Engine governor #1 & #2 - AUTO.
14. Fuel boots pumps left & right circuit breakers - PULL.
15. Engine throttles #1 & #2 - CHECK FULL CLOSED.
16. Non-essential bus - MANUAL.
17. Battery - ON/CHECK 22 VOLTS MINIMUM (MAX 29 VOLTS).
18. Master caution panel circuit breaker - PULLED.

**\*\*\*NOTE\*\*\***

**If master caution lights circuit breaker is not pulled prior to the application of APU power, the caution panel will be damaged.**

When the cockpit checklist is complete signal the captain for APU power.

19. APU power - APPLIED, ADJUST TO 26 - 28 VOLTS DC.
20. Master caution panel circuit breaker - IN.
21. Fire guard - POSTED.

**\*\*\*CAUTION\*\*\***

**Ensure fuel control switches are "OFF" and throttles are "CLOSED".**

C. Perform engine wash:

1. Signal for start (with APU).
2. Starter affected engine - ON (minimum of 25 seconds max of 30 seconds).  
NG affected engine - no higher than 25 % max.  
If NG is higher than 25 % - disengage starter.
3. Starter affected engine - OFF.

4. Starter second engine - ON (minimum of 25 seconds max of 30 seconds).

NG affected engine - no higher than 25 % max.

If NG is higher than 25 % - disengage starter.

5. Starter second engine - OFF.

6. Allow soap solution to soak (minimum 10 minutes and max of 20 minutes).

D. Perform engine rinse: (ensure fuel remains OFF, Battery ON).

1. Starter affected engine - ON (minimum of 25 seconds max of 30 seconds).

NG affected engine - no higher than 25 % max.

If NG is higher than 25 % - disengage starter.

2. Starter affected engine - OFF.

3. Starter second engine - ON (minimum of 25 seconds max of 30 seconds).

NG affected engine - no higher than 25 % max.

If NG is higher than 25 % - disengage starter.

4. Starter second engine - OFF.

5. Repeat steps 1 - 4 as necessary if solution draining from engine is not clear.

**\*\*\*NOTE\*\*\***

**Starter limitations are:**

**30 seconds ON, 1 minutes OFF**

**30 seconds ON, 5 minutes OFF**

**30 seconds ON, 15 minutes OFF**

**repeat the duty cycle.**

E. Dry motor engines: (ensure fuel remains OFF, battery ON).

1. Signal for start (with APU).

2. Motor first engine for 25 seconds.

NG affected engine - No higher than 25% MAX

If higher than 25% - disengage starter

3. Motor second engine - No higher than 25% MAX

If NG higher 25% - disengage starter

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4. Any question or problems encountered will be directed to QA.

**\*\*\*NOTE\*\*\***

**CDI shall witness card 53 and 57 in the MRC Deck.**

SEARCH AND RESCUE DIVISION  
MARINE CORPS AIR STATION YUMA  
YUMA, ARIZONA 85369-9220

From: Quality Assurance  
To: SAR NCOIC

Subj: ENGINE WASH OPERATORS SPOT CHECKLIST

Ref: (a) OPNAVINST 4790.2G  
(b) Local SAR Program

1. An engine wash operator spot check was performed on \_\_\_\_\_ by \_\_\_\_\_ on date \_\_\_\_\_.

2. The following areas were checked:

a. Is the operator designated in writing by the AMO/SAR OIC? YES NO

b. Did the operator use the checklist to perform engine wash? YES NO

c. Did the operator follow the checklist? YES NO

d. Was there proper communication between operator and maintenance? YES NO

e. Were all personnel following safety procedures? YES NO

f. Were any problems encountered? YES NO

g. Does the operator need additional training? YES NO

3. Quarterly check \_\_\_\_\_.

Annual check \_\_\_\_\_.

4. Remarks:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.



4790.16

From: Aircraft Maintenance Officer

Subj: ENLISTED ENGINE WASH OPERATORS QUALIFICATION/DESIGNATION

Ref: (a) OPNAVINST 4790.2G  
(b) NA01-11OHCE-1/1B  
(c) NA01-11OHCE-2/6-3

Encl: (1) Enlisted Engine Wash Operators Designation Form  
(2) Enlisted Engine Wash Operator Cockpit Checklist  
(3) Enlisted Engine Wash Operator Spot Check

1. Purpose: To establish qualification/designation criteria for enlisted personnel to motor aircraft engines for wash purposes only.

2. Background: The SAR Division Maintenance Department is tasked to perform power section recovery wash every 25 flight hours as per ref (c). It is essential that this task be performed in a timely and expeditious manner. By permitting enlisted personnel to motor aircraft engines, SAR's mission readiness is improved.

3. Action: Engine Wash Operator, candidates must:

- a. Be recommended by their work center NCOIC.
- b. Be senior experienced maintenance person.
- c. Be a QAR/CDQAR/CDI or a Plane Captain in model.

Be approved by the SAR OIC/AMO.

4. Responsibilities:

a. Maintenance Control/Work Center Supervisor shall:

- (1) Submit names of qualified candidates to the AMO/SAR OIC using encl (1).
- (2) Maintain Engine Wash Operators Cockpit Checklist and issued to Engine Wash Operator during 25 hr insp.

b. Quality Assurance NCOIC shall:

- (1) Receive candidate recommendation from AMO/SAR OIC.
- (2) Administer Engine Wash Operators Test, grade and evaluate.

(3) Coordinate with AMO/SAR OIC to administer operational examination given by a Functional Check Pilot in accordance with encl (2).

(4) Upon successful completion of test and operational exam, type and route Engine Wash Operators Designation Form.

(5) Maintain master Engine Wash Operators Cockpit Checklist.

(6) Maintain a jacket on all Engine Wash Operators to include a copy of designation, test, and exam results and spot checks results.

(7) At a minimum, once a quarter, audit engine wash operators using encl (3).

(8) Yearly, evaluate engine wash operators and recommend to AMO/OIC to cancel or remain.

c. Aircraft Maintenance Officer/Officer in Charge Responsibilities:

(1) Approve or disapprove engine wash operator candidates.

(2) Ensure QA administers tests.

(3) Ensure Functional Check Pilot administers operational exam.

(4) Designate in writing engine wash operator using encl (1).

(5) Ensure yearly evaluation of engine wash operators.

d. Individual Engine Wash Operator Responsibilities:

(1) Check out Engine Wash Operator's Cockpit Checklist from Quality Assurance.

(2) Ensure maintenance personnel have all gear/equipment necessary to perform engine wash.

(3) Adhere strictly to Engine Wash Operator's Cockpit Checklist encl (2).

(4) Return Engine Wash Operator's Cockpit Checklist to QA when aircraft engine wash is complete.

E. W. Hanna

## SAR ENGINE WASH OPERATOR DESIGNATION LETTER

From: Work Center NCOIC  
To: Quality Assurance NCOIC

Subj: \_\_\_\_\_ HAS BEEN NOMINATED AS A QUALIFIED CANDIDATE  
TO MOTOR ENGINE ON THE HH-1N FOR ENGINE WASHES ONLY.

\_\_\_\_\_/\_\_\_\_\_  
Work Center OIC/NCOIC/Date

From: Quality Assurance OIC/NCOIC  
To: Aircraft Maintenance Officer/SAR OIC

Subj: \_\_\_\_\_ has passed/failed the written examination for wash operator on  
the HH-1N and is/is not further recommended to be administered the operational examination to be given  
by a unit pilot.

\_\_\_\_\_/\_\_\_\_\_  
QA OIC/NCOIC/Date

From: Unit Pilot  
To: Aircraft Maintenance Officer/SAR OIC

Subj: \_\_\_\_\_ has been administered the examination on motoring engines on  
the HH-1N for engine washes only. I feel he is/ is not qualified to be designated as a Engine Was  
Operator.

\_\_\_\_\_/\_\_\_\_\_  
SAR Pilot/Date

From: Aircraft Maintenance Officer/SAR OIC  
To: All Concerned

Subj: AUTHORIZATION TO MOTOR ENGINES ON THE HH-1N FOR ENGINE WASHES ONLY.

Ref: (a) OPNAVINST 4790.2G  
(b) Current SAR Program

1. IAW ref (a) and (b) \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_ is hereby designated as an engine wash  
operator on the HH-1N for SAR Division.  
Name Rank SSN

Engine Wash Operator/Date

AMO/SAR OIC / Date

encl 1

## ENGINE WASH OPERATORS CHECKLIST

### \*\*\*CAUTION\*\*\*

**Allow engine to cool down at least 40 minutes since last operation.**

#### A. Perform a visual walkaround inspection:

1. Intake cushions and exhaust covers are removed.
2. Check for removal of the filter from PPC-56 and disconnect of the "T" fitting on PPC-53.
3. check to ensure main rotor is tied down and rotor brake applied.
4. Check to ensure battery is connected.
5. check to ensure intake cowlings are in place and FOD is not on the cabin roof.
6. Tools - ATAF
7. All personnel/equipment - properly positioned.

### \*\*\*CAUTION\*\*\*

**No maintenance will be performed during the engine wash.**

#### B. Perform cockpit checklist:

1. All circuit breaker - IN.
2. Master caution panel circuit breaker - PULLED.
3. All exterior lights - PULLED.
4. All Com/Nav equipment - OFF.
5. Clock - WOUND AND SET.
6. Radar altimeter - OFF.
7. Fire pull handles - IN.
8. Fire extinguishers - OFF.
9. Engine fuel control switches #1 & #2 - OFF.
10. Crossfeed - OFF.
11. Search light and landing light - OFF.
12. Inverters - OFF.
13. Engine governor #1 & #2 - AUTO.
14. Fuel boots pumps left & right circuit breakers - PULL.
15. Engine throttles #1 & #2 - CHECK FULL CLOSED.
16. Non-essential bus - MANUAL.
17. Battery - ON/CHECK 22 VOLTS MINIMUM (MAX 29 VOLTS).
18. Master caution panel circuit breaker - PULLED.

### \*\*\*NOTE\*\*\*

**If master caution lights circuit breaker is not pulled prior to the application of APU power, the caution panel will be damaged.**

When the cockpit checklist is complete signal the captain for APU power.

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19. APU power - APPLIED, ADJUST TO 26 - 28 VOLTS DC.
20. Master caution panel circuit breaker - IN.
21. Fire guard - POSTED.

**\*\*\*CAUTION\*\*\***

**Ensure fuel control switches are "OFF" and throttles are "CLOSED".**

C. Perform engine wash:

1. Signal for start (with APU).
2. Starter affected engine - ON (minimum of 25 seconds max of 30 seconds).  
NG affected engine - no higher than 25 % max.  
If NG is higher than 25 % - disengage starter.
3. Starter affected engine - OFF.
4. Starter second engine - ON (minimum of 25 seconds max of 30 seconds).  
NG affected engine - no higher than 25 % max.  
If NG is higher than 25 % - disengage starter.
5. Starter second engine - OFF.
6. Allow soap solution to soak (minimum 10 minutes and max of 20 minutes).

D. Perform engine rinse: (ensure fuel remains OFF, Battery ON).

1. Starter affected engine - ON (minimum of 25 seconds max of 30 seconds).  
NG affected engine - no higher than 25 % max.  
If NG is higher than 25 % - disengage starter.
2. Starter affected engine - OFF.
3. Starter second engine - ON (minimum of 25 seconds max of 30 seconds).  
NG affected engine - no higher than 25 % max.  
If NG is higher than 25 % - disengage starter.
4. Starter second engine - OFF.
5. Repeat steps 1 - 4 as necessary if solution draining from engine is not clear.

**\*\*\*NOTE\*\*\***

**Starter limitations are:**

**30 seconds ON, 1 minutes OFF**

**30 seconds ON, 5 minutes OFF**

**30 seconds ON, 15 minutes OFF**

**repeat the duty cycle.**

E. Dry motor engines: (ensure fuel remains OFF, battery ON).

1. Signal for start (with APU).
2. Motor first engine for 25 seconds.  
NG affected engine - No higher than 25% MAX  
If higher than 25% - disengage starter
3. Motor second engine - No higher than 25% MAX  
If NG higher 25% - disengage starter
4. Any question or problems encountered will be directed to QA.

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**\*\*\*NOTE\*\*\***

**CDI shall witness card 53 and 57 in the MRC Deck.**

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SEARCH AND RESCUE DIVISION  
MARINE CORPS AIR STATION YUMA  
YUMA, ARIZONA 85369-9220

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From: Quality Assurance  
To: SAR NCOIC

Subj: ENGINE WASH OPERATORS SPOT CHECKLIST

Ref: (a) OPNAVINST 4790.2G  
(b) Local SAR Program

1. An engine wash operator spot check was performed on \_\_\_\_\_ by  
\_\_\_\_\_ on date \_\_\_\_\_.

2. The following areas were checked:

a. Is the operator designated in writing by the AMO/SAR OIC?	YES	NO
b. Did the operator use the checklist to perform engine wash?	YES	NO
c. Did the operator follow the checklist?	YES	NO
d. Was there proper communication between operator and maintenance?	YES	NO
e. Were all personnel following safety procedures?	YES	NO
f. Were any problems encountered?	YES	NO
g. Does the operator need additional training?	YES	NO

3. Quarterly check \_\_\_\_\_.

Annual check \_\_\_\_\_.

4. Remarks: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.

E. W. Hanna

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